

AMENDMENTS TO THE CLAIMS:

Claims 1-32.(cancelled):

33.(currently amended): A mobile station in a mobile communication system, comprising:

a timing unit for determining, based upon a received downlink signal, timing [[a]]  
for sending of a transmit power control data to be included in an uplink signal,  
a receiving unit for receiving a plurality of downlink signals, and  
a generating unit for generating said transmit power control data according to a quality of one or more of the plurality of downlink signals, said transmit power control data to be included in said uplink signal, wherein

the quality of the plurality of downlink signals is determined from only those downlink signals received a predetermined time period prior to an instant preceding the timing of sending the transmit power control data in a next uplink signal even if the receiving unit does not receive at least one of the plurality of downlink signals prior to the predetermined time.

34.(currently amended): A mobile station in a mobile communication system, comprising:

a timing unit for determining, based upon a received downlink signal, timing [[a]]  
for sending of a transmit power control data to be included in an uplink signal,  
a receiving unit for receiving a plurality of downlink signals,  
a measuring unit for measuring a quality of only the received downlink signals which reach the measuring unit until an instant which is a predetermined period earlier than the

timing of sending the transmit power control data even if the receiving unit does not receive at least one of the plurality of downlink signals prior to the predetermined period, and

a generating unit for generating said transmit power control data according to said quality ~~even if the receiving unit does not receive at least one of the plurality of downlink signals~~.

35.(original): The mobile station of claim 34, wherein said predetermined period is for a processing time required to generate the transmit power control data.

36. (currently amended): A mobile station in a mobile communication system, comprising:

a timing unit for timing a sending of a transmit power control data to be included in an uplink signal,

a receiving unit for receiving a plurality of downlink signals,

a measuring unit for measuring a quality of one or more of the received downlink signals, and

a generating unit for generating said transmit power control data according to only the quality of the received signals which reach the generating unit until ~~an instant which is a predetermined period earlier than the timing of sending the transmit power control data, thereby limiting the generation of transmit power control data for a next uplink signal to downlink signals received prior to the predetermined period even if the receiving unit does not receive at least one of the plurality of downlink signals~~.

37. (original): The mobile station of claim 36, wherein said predetermined period is for a processing time required to generate the transmit power control data.

38. (currently amended): A mobile station in a mobile communication system, comprising:

a receiving unit for receiving transmission signals respectively transmitted in parallel from a plurality of base stations in the mobile communication system, said base stations in a soft handoff mode with said mobile station,

a channel control unit for determining from at least one of said transmission signals a channel control timing for controlling the transmit timing from the mobile station and processing the received transmission signals and providing an output to be included in a next uplink signal according to said channel control timing, and

a processing unit for processing only the received transmission signals received a predetermined time prior to sending of the next uplink signal, even if the receiving unit does not receive at least one of the plurality of downlink signals from a base station in said soft handoff mode and providing a response even if the receiving unit does not receive at least one of the plurality of downlink signals.

39. (currently amended): A mobile station in a mobile communication system, comprising:

a determining unit for determining a minimum processing time required to generate transmit power control data such that the transmit power control data can be included in a next uplink signal,

a measuring unit for measuring a respective value of signal quality from each one or more of a received plurality of downlink signals, and

a generating unit for generating the transmit power control data according to the measured value of signal quality of only respective downlink signals received prior to the start of the minimum processing time even if ~~the receiving unit does not receive~~ at least one of the plurality of downlink signals is received after the start of the minimum processing time, thereby limiting the generation of transmit power control data for a next uplink signal to downlink signals received prior to the predetermined period of the minimum processing time.

40. (currently amended): A mobile station in a mobile communication system where a mobile station is simultaneously connected with a plurality of base stations via a plurality of radio channels and where the mobile station provides transmit power control data useful in controlling the transmit power of the base stations, comprising:

a determining unit for determining a minimum processing period for processing a downlink frame to provide transmit power control data to the base stations in a next uplink frame while maintaining channel timing control,

a measuring unit for measuring a value of signal quality for each one or more of the plurality of radio channels, and

a generating unit for generating transmit power control data to be included in the next frame, from the measured value of signal quality of only respective radio channels received prior to the start of the minimum processing period even if ~~the receiving unit does not receive~~ at least one of the signals from the plurality of downlink signals radio channels is received after the start of the minimum processing time.

41. (currently amended): An electronic device in a mobile terminal of a mobile communication system, comprising:

a receiving unit for receiving transmission signals respectively transmitted in parallel from a plurality of base stations in the mobile communication system, said base stations in a soft handoff mode with said mobile station,

a processing unit for processing one or more of said transmission signals, and

a channel control unit for determining from at least one of said transmission signals a period during which data from said processing unit will be utilized in generating a next uplink signal to be transmitted to at least one base station of said plurality of base stations in said soft handoff mode, thereby limiting the data for the next uplink signal to transmission signals received prior to the predetermined period even if the receiving unit does not receive at least one of the plurality of transmission signals from a respective base station in soft handoff mode.

42. (currently amended): A radio terminal equipment comprising:

a receiving unit for receiving in parallel a plurality of radio waves which may reach the receiving unit at deviating points in time, through a radio transmission path;

a channel controlling unit for processing any only radio wave of said plurality of radio waves received during a period of time by said receiving unit according to a channel controlling procedure even if at least one of the plurality of radio waves is received after said period of time; and

a transmission unit for transmitting to said radio transmission path a transmission wave signifying a response to any radio wave which is an object of said processing by said channel controlling unit; wherein

said period of time is a period allowing for the length of time needed for executing the processes required for said channel controlling procedure including said processing by said channel controlling unit, processing to be done to said transmission wave(s) received by a radio station connected through said radio transmission path, and for the transmission in said radio transmission path ~~even if the receiving unit does not receive at least one of the plurality of downlink signals.~~

43. (previously presented): The radio terminal equipment as claimed in claim 42, wherein said period of time is a period given in advance to said channel controlling unit and is relative to an instant at which a specific one of said plurality of radio waves is received by said receiving unit.

44. (currently amended): The radio terminal equipment as claimed in claim 42, wherein:

said receiving unit obtains an individual point of time that each radio wave of said plurality of radio waves is received and measures a transmission quality for each of said plurality of radio waves;

said channel controlling unit determines a point in time, an instant at which said transmission wave is to be transmitted, which is relative to a result of averaging the sum of products of said individual points in time times each radio wave is received, and said

transmission quality measured by said receiving unit from said any radio wave received during said period of time; and

said transmission unit transmits said transmission wave(s) at said instant obtained by said channel controlling unit.

45. (currently amended): The radio terminal equipment as claimed in claim 43, wherein said plurality of radio waves reach said radio terminal equipment individually and sequentially in a cycle having a nearly equal nominal value, and  
said period given in advance is given as a subset of each period in which said radio waves can be received by said receiving unit, and which is subsequent to said individual points in time at which said plurality of radio waves individually reach the receiving unit during the period in said cycle which precedes said period given as the subset of each period.

46. (currently amended): The radio terminal equipment as claimed in claim 43, wherein each radio wave of said plurality of radio waves comprises a plurality of frames that reach said radio terminal equipment individually and sequentially in a cycle having a nearly equal nominal value, and  
said period given in advance is given as a subset of each period during which said frames can be received by said receiving unit, and which is a subsequent time from when instant ~~at which~~ a frame individually reaches the receiving unit during a period in said cycle which precedes said period given as the subset of each period.

47. (original): The radio terminal equipment as claimed in claim 44, wherein said plurality of radio waves reach said radio terminal equipment individually and sequentially in a cycle having a nearly equal nominal value, and

said period given in advance is a subset of each period in which said radio waves can be received by said receiving unit, and which is subsequent to said individual points in time at which said plurality of radio waves individually reach the receiving unit during the period in said cycle which precedes said period given as the subset of each period.

48. (previously presented): The radio terminal equipment as claimed in claim 43, wherein said plurality of radio waves reach said radio terminal equipment individually and sequentially in a common cycle having a nearly equal nominal value, and

said period given in advance is a subset of each period from the earliest point in time, at which any one of said plurality of radio waves reach the receiving unit during a period in said cycle which precedes said period given as the subset of each period, to the latest instant at which any of a following said plurality of radio waves reach the receiving unit.

49. (previously presented): The radio terminal equipment as claimed in claim 44, wherein said plurality of radio waves reach said radio terminal equipment individually and sequentially in a common cycle having a nearly equal nominal value, and

said period given in advance is a subset of each period from the earliest point in time, at which any one of said plurality of radio waves reach the receiving unit during a period in said cycle which precedes said period given as the subset of each period, to the latest instant at which any of a following said plurality of radio waves reach the receiving unit.

50. (original): The radio terminal equipment as claimed in claim 42, wherein said channel controlling unit determines lengths of time needed for both said processing said radio waves received by said receiving unit and said processing to be done on responses transmitted by said transmission unit, wherein the processing done by said radio station connected through said radio transmission path includes processing one or more of said radio waves received during a period where said lengths of time needed for the processes are suitable for the system of said channel control.

51. (original): The radio terminal equipment as claimed in claim 50, wherein at least one of said lengths of time needed for the processes to be done on said radio waves received by said receiving unit and/or said process done by said radio station connected through said radio transmission path to be done on said response transmitted by said transmission unit vary in accordance with an event which can be identified by said channel controlling unit while executing said channel control procedure, and

said channel controlling unit determines said lengths of time needed for the processes in accordance with said event identified under said channel controlling procedure.

52. (original): The radio terminal equipment as claimed in claim 50, wherein said channel controlling unit determines said lengths of time needed for the processes to be done on said radio wave received by said receiving unit under said channel controlling procedure with a level of accuracy which will compensate for at least one of a fall in the transmission rate of said radio transmission path and/or a deviation of said radio waves.

53. (original): The radio terminal equipment as claimed in claim 42, wherein said channel controlling unit during the execution of said processing restricts the operation of composing elements to processing said radio waves received by said receiving unit under said channel controlling procedure, said composing elements including said receiving unit, said channel controlling unit, and said transmission unit.

54. (original): The radio terminal equipment as claimed in claim 53, wherein said processing said radio waves received by said receiving unit under said channel controlling procedure by said composing elements includes processing to determine at least one of a period suitable for said transmission system of said radio transmission path and/or a starting point of said period.

55. (original): The radio terminal equipment as claimed in claim 42, wherein said plurality of radio waves respectively reach said radio terminal equipment individually and sequentially in a cycle and contain control information on transmitting power control, and said channel controlling unit controls the transmitting power responsive to said control information included in a specific radio wave of said plurality of radio waves reached during a preceding period, through at least one of said receiving unit and said transmission unit.

56. (original): The radio terminal equipment as claimed in claim 42, wherein said channel controlling unit monitors at least one of a transmission quality and a field strength level of a radio wave received by said receiving unit per wireless zone on the basis

of zone configuration and channel allocation, and performs a channel control of a wireless zone which has the highest transmission quality.

57. (original): The radio terminal equipment as claimed in claim 42, further comprising a demodulating unit for acquiring transmission information by one of demodulating at least part of said radio waves, which are the object of the processing by said channel controlling unit and by demodulating said radio waves under predetermined weighting.

58. (original): The radio terminal equipment as claimed in claim 42, further comprising a demodulating unit for acquiring transmission information by one of demodulating at least part of said plurality of radio waves reached through said radio transmission path and received in parallel by said receiving unit, and by demodulating said radio waves under predetermined weighting.

59. (previously presented): The radio terminal equipment as claimed in claim 42, wherein said channel controlling unit determines an instant at which said transmission wave is to be transmitted to said radio transmission path, and said transmission unit transmits said transmission wave at said instant determined by said channel controlling unit.

60. (previously presented): The radio terminal equipment as claimed in claim 59, wherein said instant at which said transmission wave is to be transmitted to said radio

transmission path fluctuates in accordance with events which can be identified by said channel controlling unit during said processing according to said channel control procedure, and

said channel controlling unit obtains said instant at which said transmission wave is to be transmitted in accordance with said events identified under said channel controlling procedure.

61. (currently amended): A base station in a mobile communication system, for receiving an uplink signal from a mobile terminal in the communication system, comprising:  
a receiving unit for receiving a transmit power control data generated by a mobile station according to a quality of one or more of a plurality of downlink signals ~~which are reached received~~ at said mobile station until a timing time which is a predetermined period earlier than a timing of sending the transmit [[a]] power control signal [[at]] ~~from~~ the mobile station even if the mobile station does not receive at least one of the plurality of downlink signals, thereby limiting the generation of the transmit power control data for a next uplink signal to downlink signals received prior to the predetermined period, and

a transmit power control unit for controlling a transmit power control according to said transmit power control data ~~even if the receiving unit does not receive at least one of the plurality of downlink signals.~~

62.(currently amended): In a mobile radio terminal where transmit and receive timing is controlled by a channel control procedure, a method of transmitting a response to a received plurality of radio waves, comprising the steps of:

receiving in parallel the plurality of radio waves which may reach the radio terminal equipment at deviating points in time, through a radio transmission path; processing only any radio wave of said plurality of radio waves having a deviation less than an instant where processing could not be completed in time to maintain the channel control procedure; and transmitting to said radio transmission path a transmission wave signifying a response to only the radio waves which are an object of said processing ~~even if the receiving unit does not receive at least one of the plurality of downlink signals, thereby limiting the a response to include only information processed from radio waves received prior to said instant.~~

63.(original): The method of claim 62, wherein  
said channel control procedure includes processing to be done to said transmission wave(s) received by a radio station connected through said radio transmission path and which is also suitable for a transmission system in said radio transmission path.

64. (currently amended): The method of claim 62, further comprising the step of:  
determining the instant responsive to the receiving step and the channel control procedure and said ~~point in time~~ instant is relative to a point in time at which a specific one of said plurality of radio waves is received.

65. (currently amended): The method of claim 62, further comprising the steps of:  
determining an individual ~~point of~~ time that each radio wave of said plurality of radio waves is received;

measuring a transmission quality for each one or more of said plurality of radio waves;

determining a transmission instant, which is a point where said transmission wave is to be transmitted, and is relative to a result of averaging the sum of products of said individual ~~points in time~~ times and said transmission quality measured from said any radio wave received prior to said instant; and

said transmitting step transmits said transmission waves at said transmitting instant.

66. (currently amended): A method of processing a plurality of downlink signals in a wireless communications system where each downlink signal of said plurality comprises sequential frames and where transmit and receive timing is controlled by a channel control procedure, comprising the steps of:

receiving in parallel the plurality of radio waves which frames may reach the radio terminal equipment at deviating times instants, through a wireless communication channel;

processing only frames of said plurality of radio waves having a deviation less than an instant where processing could not be completed in time to maintain the channel control procedure even if at least one of the plurality of radio waves has not yet been received; and

transmitting through a wireless communication channel an uplink signal signifying a response to said frame(s) which is an object of said processing, thereby limiting the response to include only information processed from radio waves received prior to said instant even if the receiving unit does not receive at least one of the plurality of downlink signals.

67.(original): The method of claim 66, wherein

    said channel control procedure includes processing to be done to said uplink signal received by a radio station connected through said wireless communication channel and which is also suitable for a transmission in said wireless communication channel.

68. (previously presented): The method of claim 66, further comprising the step of:

    determining the instant responsive to the receiving step and the channel control procedure and said instant is relative to a point in time at which a specific one of said plurality of radio waves is received.

69. (currently amended): The method of claim 66, further comprising the steps of:

    determining an individual instant time that each frame of said plurality of radio waves is received;

    measuring a transmission quality for each one or more of said plurality of radio waves;

    determining a transmission instant, which is a point where said uplink signal is to be transmitted, and is relative to a result of averaging the sum of products of said individual instants times and said transmission quality measured from said any frame received prior to said instant; and

    said transmitting step transmits said uplink signal at said transmitting point in time instant.

70. (currently amended): A method of generating transmit power control data to be transmitted in an uplink signal from a mobile terminal in a communication system, the mobile terminal capable of receiving a plurality of downlink signals, comprising the steps of:

determining a minimum processing time required to generate the transmit power control data such that the transmit power control data can be included in an uplink signal,

measuring a respective value of signal quality from each one or more of a received plurality of downlink signals, and

generating the transmit power control data according to the measured value of signal quality of only respective downlink signals received prior to the start of the minimum processing time even if ~~the receiving unit does not receive~~ at least one of the plurality of downlink signals is not yet received prior to the start of the minimum processing period.

71. (currently amended): A method of generating transmit power control data to be included in a frame of an uplink signal from a terminal in a communication system, the terminal capable of simultaneously receiving a plurality of frames in respective downlink signals from a plurality of bases stations in a soft handoff mode with said terminal, the frames having a period of time during which information is measured that is useful in determining the transmit power control data to be included in the frame of the uplink signal, comprising the steps of:

receiving a downlink signal,

determining from the downlink signal an uplink signal timing used in maintaining channel control when generating and transmitting the uplink signal, and

generating transmit power control data to be included in a next frame of an uplink signal, the generating starting at a time required to maintain the uplink signal timing, and the

transmit power control data generated from only frames of data from respective downlink signals[[,]] having said useful periods of time which are received prior to the start of the generating step even if ~~the receiving unit does not receive~~ at least one useful period of one of the plurality of downlink signals from a base station in said soft handoff mode has not been received prior to the start of the generating step.

72. (currently amended): A method of generating transmit power control data to be included in a frame of an uplink signal from a terminal in a communication system, the terminal capable of simultaneously receiving a plurality downlink signals from a plurality of bases stations in a soft handoff mode with said terminal, comprising the steps of:

determining a period of time during which a measuring of a respective value of signal quality for each one or more of the plurality of downlink signals must occur in order to maintain uplink channel control timing while including the transmit power control data in a next uplink frame, and

generating transmit power control data to be included in the next uplink frame from only the downlink signals having their respective value of signal quality measured during the determined period of time even if ~~the receiving unit does not receive~~ at least one of the plurality of downlink signals from a base station in said soft handoff mode has not been received prior to the start of the generating step.

73. (currently amended): A method of controlling transmission powers in a wireless mobile communication system where a mobile station is simultaneously connected with a plurality of base stations via a plurality of radio channels and where the mobile station provides

transmit power control data useful in controlling the transmit power of the base stations, comprising the steps of:

determining a minimum processing period for processing a downlink frame to provide transmit power control data to the base stations in a next uplink frame while maintaining channel timing control,

measuring a value of signal quality for each one or more of the plurality of radio channels, and

generating transmit power control data to be included in the next frame, from only the measured value of signal quality of respective radio channels received in between before the minimum processing period even if the receiving unit does not receive at least one of the plurality of downlink signals is not received prior to the start of the minimum processing period thereby limiting the generation of the transmit power control data.

74. (currently amended): A method of controlling a transmission power of a base station of a wireless communication system, comprising the steps of:

receiving in the base station an uplink signal containing transmission power control data,

determining from the transmission power control data a transmission power of a next downlink signal, and

transmitting the next downlink signal at a power level responsive to the determining step, wherein

generating the transmission power control data in a mobile terminal ~~comprises~~ includes the steps of:

determining a period of time during which a measuring of a respective value of signal quality for ~~each one or more~~ of [[the]] a plurality of downlink signals must occur in order to maintain uplink channel control timing while including the transmit power control data in a next uplink frame, and

generating transmit power control data to be included in the next uplink frame from only the downlink signals having their respective value of signal quality measured during the determined period of time even if ~~the receiving unit does not receive~~ at least one of the plurality of downlink signals is not received during the period of time during which the measuring must occur.

75. (currently amended): A method of signal processing in a wireless communication system, comprising the steps of:

transmitting a downlink signal from a base station;  
receiving a downlink signal in a terminal;[[,]]  
determining from the downlink signal an uplink signal timing required to maintain channel control when generating and transmitting an uplink signal;  
processing the downlink signal to provide a processing result; and  
generating an uplink signal to be transmitted according the determined uplink signal timing, the uplink signal containing the processing result if the processing step is completed prior to the start of the generating step, the generating step starting at a time required to maintain the uplink signal timing ~~even if the receiving unit does not receive at least one of the plurality of downlink signals, thereby limiting the processing results for inclusion in a next uplink signal to results obtained prior to the start of the generating step.~~

76. (currently amended): A method of signal processing in a wireless communication system having a plurality of base stations in a soft handoff mode with a terminal, comprising the steps of:

transmitting a downlink signal from each base station of said plurality of base stations in said soft handoff mode;

receiving the transmitted downlink signals in [[a]] the terminal;[[,]]

determining from at least one of the downlink signals an uplink signal timing required to maintain channel control when generating and transmitting an uplink signal;

processing each one or more of the downlink signals to provide a processing result for each downlink signal; and

generating an uplink signal, the uplink signal containing the processing result for each downlink signal in which the processing step is completed prior to the start of the generating step, the generating step starting at a time required to maintain the uplink signal timing even if the receiving unit does not receive at least one of the plurality of downlink signals, thereby limiting the processing results for inclusion in a next uplink signal to results obtained prior to the start of the generating step.